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PETER C. SEDERBERG

Simple, Pure, and True: An Emergent Vision of Liberal Learning at the Research University

PETER C. SEDERBERG

SOUTH CAROLINA HONORS COLLEGE

Epiphanies, presumably, strike suddenly. This vision, however, was not like Saul's on the road to Damascus; rather, it emerged over 25 years of incremental involvement in creating one of the stronger Honors Colleges in the country at the University of South Carolina. Over the past five years, in particular, my evolutionary experience has been shaped by a growing recognition of an underlying problem confronting the contemporary research university.

In general, the demands faced by research universities have not changed since World War II, though some have fluctuated in intensity. The essential problem, I believe, arises less from external demands and goals than from a certain hollowness at the core of the university. The center most certainly will not hold, if there is no center. Unlike Saul, I did not experience this vision while on a journey; rather, the journey itself built the vision. Moreover, critical colleagues have been accompanying me, constructing and refining what became a major program of academic enrichment for the Honors College—Research Based Learning. Permit me, then, to recap briefly our journey, admitting, though, that this retroactive summary adds a fictive coherence to the lived experience. The journey now has reached a point of recognition of the crisis at the core of the research university, so I then share my response to this recognition.

ORIGINS AND ELEMENTS OF RESEARCH BASED LEARNING

The first step on this journey began with a simple question, "How can the Honors College better prepare its students for their capstone, senior thesis?" The thesis, for many students, was less an exhilarating finale to their undergraduate education than an intimidating, even crushing, burden. Some students in science and engineering were well prepared through earlier involvement in the labs of professors who eventually became their directors, but others floundered. Clearly, many students needed a better foundation and preparation for their theses.

By pulling on this single thread, we eventually unraveled and reweave how we conceived undergraduate education. Our conclusion was that, to better prepare our

students for their theses, we needed to integrate the research and instructional missions of the university. Through the integration of these two missions, we would also close the gap between graduate and undergraduate educational experiences and synthesize mastery of the substance of a discipline with creation of that substance.

As Doug Williams, my associate dean and a major partner on this journey, remarked, the current gap between these dualities “is largely filled with rhetoric.” We set out to do better by expanding programs that already existed and creating new ones where needed. We gathered our initiatives under the general rubric of Research Based Learning (RBL) and set out to achieve three goals:

- educating the next generation of scholars;
- harnessing the considerable energy and creativity of undergraduates in support of the research mission of the University; and
- enriching the students’ mastery of the substance of their disciplines by involving them in the challenges of its creation.

FIRST BRIDGES

A number of honors students, especially in the sciences, participated in the research programs of professors, preparing a foundation for their theses. Some were co-authors on presentations and publications. We first turned to broadening and deepening undergraduate research opportunities across all research-based liberal disciplines by:

- establishing a Thesis Planning course for the sixth semester;
- expanding undergraduate research fellowships in the college by 500%;
- encouraging students outside the sciences and engineering to pursue these fellowships or consider doing third-year independent study projects.

We next faced the challenge of transcending the basic logistical limits of transplanting the standard apprenticeship model of graduate study to the undergraduate population. Doug Williams designed the Marine and Aquatic Research Experience (MARE), a largely self-directed, self-regenerating undergraduate research team pursuing its own research program (<http://schc.sc.edu/MARE/Mare.htm>). Starting with a half-dozen students in 1998, MARE has grown to over 25 active participants annually. For the last three years, MARE students have been making research presentations at regional and national scientific conferences.

Pleased with the success of MARE, we awarded small grants to faculty in chemical engineering, neuroscience, oral history, and cardio-biology to replicate MARE-like teams in their disciplines. Additional ones have been developed in RNA and disease, exercise and disease prevention, and implications of nanotechnology in spring

semester 2004. Through our experience with MARE, we have now a model that faculty in other disciplines can draw upon to implement analogous programs.

As we encouraged students to engage in research, we realized that the next logical step was to support the presentation and publication of their results. For this reason, two years ago we created a fund to pay the expenses of any student making presentations at regional or national professional conferences.

In another innovative move, Doug Williams and several students associated with MARE earned a grant from the National Science Foundation (2001) to create an online undergraduate research journal in marine science, *MarSci* (first issue, October 2002; <http://schc.sc.edu/marsci/index.html>). Other undergraduate research journals exist, but as far as we have been able to determine, *MarSci* is the only one run by an undergraduate editorial board. Building upon the experience of *MarSci*, the neuroscience team is starting their own on-line journal, *Impulse* (<http://impulse.schc.sc.edu/about.html>), with an international board of student editors.

We believe these programs create a unique web of overlapping opportunities that not only prepares students for a culminating thesis experience but also enriches their understanding of the substance of their particular disciplines and provides exceptional preparation for graduate school.

But we soon realized it was not enough.

THE NEXT LEVEL: CURRICULUM REFORM

Despite our satisfaction with the bridges we had built, we grew frustrated with other limits of the transplantation-apprenticeship model. In this model, followed by most research universities, talented undergraduates are transplanted to the other side of the divide between undergraduate instructional and graduate research missions of the university by becoming apprentices in the research program of particular professors. Their experiences can be profoundly deep, but also decidedly narrow. Only if the lead professor has the time, interest, and knowledge will an apprentice become versed in the many issues originating outside the research program but nonetheless influencing the conduct and course of inquiry within it.

Apprentices, we believe, must understand the epistemology, logic, conduct, and context of inquiry to be fully competent in a particular discipline. We grew to recognize that such issues most appropriately belong in the undergraduate educational experience. Understand, we are concerned with mastering not simply the research design and techniques prevailing in a particular discipline but also the assumptions that lie behind inquiry, the ethical issues raised by inquiry, and the external forces that impinge upon inquiry. We set out, therefore, to connect the students' research and learning experience with such concerns, not in an effort to displace the mastery of substance but to inform students' understanding about how that substance is created in the first place.

Consequently, we began to develop another RBL component in the Honors College—"critical connection" courses, the first of which was "Fundamentals of Scientific Inquiry," offered by Doug Williams in 1997. Students who took the class found it to be a revelation on many levels, as did Doug. They raised, though, a

practical question: “How does this count toward our degree?” We added a second question: “How do we expand this opportunity beyond the sciences?”

We responded to these challenges by creating the Minor in Inquiry (MIQ). We developed two additional “fundamentals” courses in the social sciences and in the humanities. The three serve as the core requirement of the new minor (<http://schc.sc.edu/students/RBLmiq.html>). Currently, we are also experimenting with “Fundamentals of Business Based Inquiry.” The remainder of the minor requires that students take a number of critical connection courses from a variety of departments. The essential intent of these courses is to pull students outside their particular discipline by asking questions about the foundations of inquiry as practiced within their disciplines. For example, someone in the natural sciences might take courses such as History of Science, Sociology of Science, and Philosophy of Science. Where desired courses did not yet exist in the university curriculum, we gave grants for faculty to develop them, including a course in the ethics of inquiry and a second on the political economy of inquiry.

Our goals, therefore, have evolved substantially from improved thesis preparation. Nor are we simply interested in cultivating sophisticated, critically informed applicants for graduate school. We now aim to reform undergraduate education. We are convinced that those who participate extensively in RBL opportunities will animate the substantive mastery of their particular discipline through connecting inquiry to related problems that fall within the conventional domain of other disciplines. They will become better educated.

These curricular experiments, therefore, suggest a redefinition of liberal education for the 21st Century. No person, however gifted, can master the content of any one discipline, much less all disciplines. However, when students develop the critical connections between the conduct of inquiry in a particular discipline and the various contexts—logical, ethical, social, political, and economic—of this inquiry, they will be tied into a multidisciplinary dialogue based not on close substantive relations (like that between biology and chemistry), but on the web of influences informing patterns of disciplinary development. Our fully developed program of RBL, then, may be more than a means for the integration of research and instruction; it represents the core of a model to reform general education requirements in the university.

INTERNAL CONSTRAINTS: TOWARD THE REFORMATION OF THE RESEARCH UNIVERSITY

Our efforts to realize this increasingly ambitious and multifaceted vision have not always proceeded smoothly. Even with sufficient internal resources to support our initiatives, we encountered institutional barriers to our aspirations. Like our students, faculty members want to know how participation in our RBL ventures count within the institution. Frankly, they do *not* count for much in the dominant understanding of the purpose of a research university. Consequently, we set out to reform the reward structure to recognize faculty contributions to RBL and other Honors College programs.

Despite some success in gaining formal recognition of such contributions, we continue to encounter resistance from the entrenched reward structure. At present, our progress with these initiatives largely depends upon the enthusiasm of relatively few individuals whose support is provided primarily *pro bono*. We know of others who express interest in our projects but who limit their participation because the investment of time and energy into RBL activities goes unrecognized, if not actively discouraged, by various home units.

At one level, we might excuse such resistance as the standard response of any entrenched institution to a new pattern of activities. Of course, we were convinced that our programs contributed to the overall mission of a research university, and we just needed to keep drawing the connections between RBL and the guiding vision and goals of the university. Over time, however, we grew more pessimistic. We feared that, in fact, our vision and the one driving the university do not match. I began to suspect that our university and, indeed, all research universities have no central, animating, unifying purpose or vision. At their core, they are hollow. The pursuit of external rankings of success provides only a thin, transient, and ultimately unsatisfying gruel unable to compensate for the absence of an animating, inherent purpose.

When asked to identify what the purpose of a university might be, most people invoke a version of the standard model—"Research, teaching, and service, and the greatest of these is research." Has anyone's heart quickened, has anyone's soul soared to hear this tired trinity incanted? Critics commonly complain that the definition of the trinity inevitably sets its elements in competition. Defenders of the trinity respond by pointing to many productive researchers who are also tremendous teachers and to unproductive faculty who are also wretched in the classroom. Critics retort with examples of the scholars who can't or don't teach and teachers who inspire their students even though their research agenda is minimal.

The best we can conclude from this recurring debate is that great research and teaching and worthy service are not inherently incompatible, but none is necessary nor sufficient to guarantee the others. That said, two structural factors in the contemporary university create conflict within the trinity despite the absence of any inherent incompatibility.

First, time is limited. Time spent in teaching, advising, and grading, or service for that matter, is not available for the pursuit of one's research program. Consequently, research universities commonly release productive researchers from formal teaching and advising obligations. Such policy decisions convert what may not be incompatible in principle into what must become incompatible in practice. Ironically, according to the arguments made by the defenders of the standard model, this outcome places teaching, at least at the undergraduate level, in the hands of those they see as least qualified—the research dead.

Second, the reward structure is strongly biased toward, if not totally based upon, research productivity. Whatever the surviving compatibilities among the elements of the trinity, they are eliminated by this prevailing reward structure. Fortunately, many faculty members remain committed to the inherent values of the teaching profession and make creative contributions to the life of the institution despite growing

structural discouragement from doing so. Often, the success the university enjoys at the undergraduate level is based on the disproportionate contribution of these members.

Despite the dominant structural tendencies of research universities, they are not the fundamental problem. Borrowing an observation from John Searle on the mind/body problem, the mission trinity insures arguments about the count. Do we have one mission? Two? Or three? Are they equal, or are teaching and service largely afterthoughts? And so on. The mistake, however, is not how we count and rank-order these elements. Our mistake was to start counting at all. As Morse Peckham was fond of observing, "It's the obvious that eludes us." Research, teaching, and service cannot be ends of the university; rather, they are means to an end. Organizational theory generally considers the displacement of ends by means to be a form of bureaucratic pathology.

The problem for the research university is that these three means are neither compelling nor unique. Many organizations conduct research—corporations, public agencies, government weapons laboratories, and so forth. How is the university's research mission distinct? Many organizations engage in teaching; indeed, some argue that corporations can more effectively produce the kinds of workers they need. Does the university's teaching differ from training people to staff the corporate world? Finally, the university, while properly addressing the needs of other communities, is not a service organization, like a governmental department of welfare. So what should be the primary mission of a research university?

My answer might seem prosaic at first glance: The end of the university is learning. All three elements of the trinity of means come into balance when they are seen in the service of this single goal. The goal of scientific research is not Truth, but provisional learning open to falsification, in Karl Popper's apt insight. Inquiry in the humanities, echoing Habermas, similarly proceeds best when the dialogue of contending views is not closed down by the imposition of an ideological consensus. The participants must remain free to exploit, in Peckham's phrase, semiotic indeterminacy.

Of course, other organizations want to learn, but always in service to another, more basic end: corporations for profit, military labs to gain advantage over the enemy, and so on. Precisely because the end of the research university is learning, relations with other organizations often become problematic. A commitment to learning as an end essentially involves a commitment to maintain open dialogue and not merely to tolerate but actually to organize in order to protect negative feedback.

This institutional commitment to open exchange and negative feedback inevitably disturbs some of the external partners of the university. Corporations, in the pursuit of profits, take a proprietary view of the knowledge they create. Governments, in the pursuit of security, take a proscriptive view of knowledge that might aid prospective enemies. Religions strive to preserve orthodoxy. The wider public often is appalled at the tolerance of deviant ideas within the university.

The purpose of teaching within the university also reflects the commitment to learning as an end in itself, not simply training for mastery of a task. Ideally, students and, for that matter, professors share this commitment both for themselves and for the other participants in the community of learning. As such, the members of this community must also be dedicated to maintaining the dialogue; they must resist

premature closure on any discussion. The community of learning focuses more on questions than answers, on intellectual curiosity than fixed truth, and, for this reason, other institutions often view the university as subversive of prevailing societal norms. When charges of subversion are hurled at the university, its members reflexively, and correctly, invoke the principle of academic freedom, a principle that makes sense only in a community whose primary purpose is maintaining the dialogue. Consider the incongruity of invoking this principle of academic freedom in the national security, religious, or corporate community.

The university also must serve the needs of wider communities—local, national, and global—but such service should remain subservient to the end of learning. The university should not be organized to provide services to external clients as an end in itself. Rather, service activities must by design contribute to the end of learning. The mere replication of services that contribute little to learning are more properly left to agencies dedicated to their provision, not pursued by the university.

Let me be clear. These other organizations of our society and members of the wider public are not wrong-headed. They are pursuing ends appropriate to their organizational imperatives or life plans. Of all human endeavors, only the university holds to learning as its *raison d'être*. The overall balance of our social system would be profoundly disrupted by any effort to “universalize” the university.

Recognition of the university as *the* paramount learning community in our society represents a reformation. Like the original Reformation almost five centuries ago, at its heart lie a clearer, simpler focus on what is essential and a skepticism toward, even rejection of, what is superfluous. The inclusion of corporate and security concerns into our core identity, for example, will prove as corrupting as simony was to Christ's church.

Inevitably, this idealization will be compromised as the university engages other institutions in society. The goals of the ideal must often be balanced with the demands of the real. Nevertheless, compromises must come from a foundation that holds true to the core mission and identity. The university must not take the core missions of other organizations (like profit or national security) into its heart, for that will inevitably corrupt its operations. Rather it must enter into negotiations with these other power centers on the basis of a principled commitment to learning as an end.

THE EMERGENT VISION AND THE WIDER UNIVERSITY

What, then, does this vision of liberal learning imply for the wider university. This emergent vision, and the initiatives that generated it, led to the progressive enrichment of the Honors College. We may even succeed in changing the calculus of the entire university to some extent. My vision of liberal learning as the core mission of the College holds certain basic implications for the university:

First, we must work not simply to bridge, but to integrate, the research and instructional missions of the university. I believe this entails developing means of blurring the distinction between graduate and undergraduate instruction and going beyond the apprenticeship model. The integration of research and instruction entails

the vertical and horizontal integration of educational experiences, the reexamination of core educational requirements, and the development of new curricular opportunities. We should look to extend these integrative initiatives beyond the arts and sciences to involve the major professional schools, as well.

Second, if the trinity of research, teaching, and service should all serve the same end, learning, then the university should support, that is, reward, those activities that contribute most effectively to this learning mission. The university should encourage some research even though it fails to attract external funding. It should avoid other research even though it comes with generous external support. Only by focusing on the university's learning mission will we be able to discriminate between these two forms of research.

Activities that creatively weave the elements of the trinity of means together in the pursuit of learning should receive high recognition. We must strive to ensure that the reward structure of the university contributes to this purpose. It follows, as well, that the highest form of service enterprise will be one that integrates service with one or both of the other two paths to learning.

Third, if the purpose of the university is not research, teaching, and service, but learning, then relations with external sources of funding must also be reformed. First, we must avoid those funding sources that undermine the credibility of the learning enterprise, specifically those who would block negative feedback or stifle open discourse. Certain associations with the national security organizations and corporate interests, in particular, must be scrutinized for their potential impact on the university learning community. Just as we now have Institutional Review Boards (IRB) for human subject research, we should create an IRB to review questionable funding associations for their impact on our institutional integrity.

Beyond this internal effort, we must work to transform the funding environment, to educate both government and private sources of support about how the character and strength of the university research environment exists *because of* the commitment to learning, not despite it. Both federal organizations and private foundations show increasing interest in some of the challenges to which RBL responds. Yet their support often lacks vision, ambition, and understanding. Moreover, the organization of their priorities and operations simply reinforces some of the structural barriers within institutions. We must use our institutional leverage to urge external funding organizations to recalibrate their expectations.

CONCLUDING COMMENTS

Research Based Learning represents the most significant academic enhancement in which I have participated since I helped initiate the Honors College a quarter century ago. My vision and our ambition have grown along with our understanding of the nature of the task we have assumed. One common measure of the worth of an idea is the way implications and associations develop far beyond the initial conception. I began with the apparently straightforward challenge of better thesis preparation and have now arrived at a reforming vision for the research university and its relations with other institutional actors.

PETER C. SEDERBERG

In RBL, we invite our students to explore the critical connections between disciplinary inquiry and the factors that shape it. Unsurprisingly, given the thrust of our enterprise, we found ourselves making critical connections for our own project. Most recently, I have realized that students, in their inchoate way, already recapitulate the prevailing, and inadequate, idea of the university when they matriculate. They are not *tabulae rasae* on which we can write at will; they, too, must be brought into the process of transformation.

My vision of a community of liberal learning is, therefore, self-challenging; by definition it must be open to critique and change. I do not expect those who consider my argument to experience conversion upon reading this statement, but I hope they will be intrigued enough to join the journey.

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